Manitoba Agriculture

FARM BUSINESS MANAGEMENT

Guidelines for Estimating

DAIRY PRODUCTION COSTS

Based on a 50 Cow Herd

Information Update

DATE: January, 1988

This guide is designed to provide planning information and a format for calculating costs of production on a dairy enterprise. This guideline is based on a 50 cow herd with an average daily production of 20.3 litres and an average annual production of 6300 litres at 3.6 kg. B.F./hl. **The production costs included in this budget are not intended as a cost study of the dairy industry in Manitoba.**

The guidelines can be useful for comparison purposes. Comparison of costs can be made with other farms or with one farm over a number of time periods. Projected plans can be compared with actual happenings as they unfold.

The assumptions on which costs were calculated are clearly defined in the supporting pages. They were developed by using a combination of recommended practices and information obtained from a select group of producers. When interpreting these costs for an individual situation, adjustments may be required. Each assumption must be examined and adjustments made where necessary.

DAIRY PRODUCTION COSTS (50 COW HERD)
(includes milking and dry cows only)

A. OPERATING COSTS	Per Cow	Your Costs
1) Feed Costs:		
Forage	$ 327.25	$
Dairy Ration	347.20	
Protein Supplement	77.00	
Dry Cow Grain Mix	13.00	
Salt & Minerals & Vitamins	19.80	
Subtotal Feed Costs	$ 784.25	$
2) Other Operating Costs:		
Milk Recording & Registration	$ 25.00	$
Bedding	20.00	
Veterinary & Medicine	45.00	
Breeding	50.00	
Dairy Supplies	45.00	
Marketing & Transportation	347.76	
Bldgs, Equip. & Mach. Repairs & Maint.	120.48	
Utilities	52.00	
Insurance	29.56	
Replacement Cost	179.00	
Miscellaneous	32.00	
Subtotal Other Operating Costs . . .	$ 945.80	$
Interest on Operating	8.65	
TOTAL OPERATING COSTS	**$1,738.70**	$
B. FIXED COSTS		
(1) Depreciation: a) Buildings	$ 92.07	$
b) Equipment & Mach.	128.70	
(2) Investment: a) Buildings	$ 90.02	
b) Equipment & Mach.	62.92	
c) Livestock	120.00	
TOTAL FIXED COSTS	**$ 493.71**	$
TOTAL OPERATING & FIXED COSTS	**$2,232.41**	$
C. LABOUR COST		
62 hrs/cow @ $8.00/hr	$ 496.00	$
TOTAL COST OF PRODUCTION.	**$2,728.41**	$

Breakeven Required To Cover: (based on 6,300 litres)	Per hl	
Feed	$12.45	$
Other Operating & Interest.	15.15	
Fixed	7.84	
Labor	7.87	
TOTAL	$43.31	

FEED REQUIREMENTS

ASSUMPTIONS:

600 kg cow produces 20.3 litres/day of 3.6 kg B.F. per hectolitre. An annual milk production of 6,300 litres (6,500 kg)/cow or 63.0 hl.

Forages, dairy ration and supplement are valued at current market price.

Forage fed - good quality mixed hay 90% dry matter (DM), 16% crude protein (CP), 59% total digestible nutrients (TDN) on a (DM) basis.
Note: Producers feeding haylage or corn silage, approximate hay equivalents are 1 tonne 90% DM hay = 2 tonnes 45% DM haylage = 3 tonnes 30% DM corn silage.

Lactating Cows Are Fed an average of 7.0 kg/cow/day of a (14-16%) CP dairy ration. During the first 150 to 180 days of lactation, lactating cows receive an additional 1.1 to 1.4 kg/cow/day of a 36 to 44% commercial protein supplement as a topdress.

Dry Cows Are Fed a total of 100 kg of a dry cow grain mix (i.e. carrier of minerals and vitamins; lead-feeding) during a 50-55 day dry period.

FORAGE (includes 10% wastage)

16.3 kg hay/day X 365 days = 5.95 tonnes hay/cow/year
5.95 tonnes hay @ $55/tonne = **$327.25/cow/year**

DAIRY RATION/PROTEIN SUPPLEMENT: (milking cows)

7.0 kg (14-16%) CP ration/cow/day X 310 days = 2.17 tonnes/cow/lactation
2.17 tonnes @ $160/tonne = **$347.20/cow/lactation**

PROTEIN SUPPLEMENT:

1.11 kg 36% to 44% supplement/cow/day X 180 days = 200 kg/cow/lact.
200 kg @ $385/tonne = **$77/cow/lactation**

DRY COW GRAIN MIX

0.1 tonnes X $130/tonne = **$13/cow/dry period**

SALT/MINERALS/VITAMINS

Salt/minerals/vitamins = approximately 30 kg/cow/year

30 kg X $16.50/25 kg bag = **$19.80/cow/year**

NOTE: 3.0 ounces/cow/day X 365 days = 1,095 ounces/cow/year

OPERATING COSTS

MILK RECORDING & REGISTRATIONS

Milk Recording	$1,000
Registrations & Transfers	250
	$1,250 = **$25/cow**

BEDDING

Stanchion barn:
Approximately 1 tonne per cow/year @ $20/tonne = **$20/cow**

VETERINARY & MEDICINE

Drugs - Blackleg, I.B.R., Mastitis, etc. - approximately $1,200.
Service - $54/hour assumed 12 visits (assumed 2 hours/visit for first three trips, 1 hour/visit for remaining trips).
Mileage - $1 per km one way. Assumed round trip distance to be 40 km.
= **$45/cow**

BREEDING COST

Costs vary depending upon: (1) price/vial of semen, (2) service charge/visit, and (3) number of services/conception. Assumed 2 services @ $15/vial of semen and $10/visit.

Semen:	$30 ($15 x 2)
Services:	20 ($10 x 2)

Total Costs: **$50/cow**

DAIRY SUPPLIES

Chlorine, Filters, Soap, Acid, Udder Wash, Teat Dip, etc.
approximately $2,250/herd/year or $45/cow.

MARKETING & TRANSPORATION COSTS

	Cost/hl
Milk Hauling	$2.01
M.S.Q. Administration	0.08
Administration (Pool, Board)	0.34
Market Expansion	0.59
CDC Levy	2.50

$5.52 per hl. or **$347.76/cow**

BLDG, EQUIP. & MACH REPAIRS & MAINT.

Three to four percent of buildings and equipment repairs and maintenance are based on average annual investment in buildings and equipment or one half of new costs. For purposes of this budget we have assumed $3,224 for the herd as adequate for this cost or **$64.48/cow.**

Truck and Tractor, fuel, repairs, maintenance, insurance, license. It is estimated that a tractor will be used for 500 hours and truck will travel 16,000 km per year. Assume $2,800 for herd or **$56/cow.**
Total = **$120.48/cow**

UTILITIES

Hydro and telephone were estimated from producer records. It is estimated that a 50 cow herd will utilize 50,000 kw/yr @ 0.04/kw = $2,000 and $600 for telephone. For purposes of this budget $2,600 for the herd was assumed or **$52/cow.**

INSURANCE - fire, hail and wind		Herd
Building & Equipment . .	$173,802 @ $0.60/$100 of coverage	$1,042.81
Livestock	$75,000 @ $0.54/$100 of coverage	$ 405.00
Public Liability	approximately	$ 30.00
	TOTAL	$1,477.81 or **$29.56/cow**

REPLACEMENT COST

Assumed culling rate of 24%. Therefore 12 cows of the 50 were replaced each year. It was further assumed that 1 of the 12 culls died.

Buy 12 replacement cow @ $1,250	$15,000
Sell 11 cull cows @ $550	- 6,050
	$ 8,950 for herd or **$179/cow**

MISCELLANEOUS

Accounting, office supplies, small tools & hardware estimated at $1,600 or **$32/cow.**

INTEREST ON OPERATING

Interest was calculated by taking 1/2 of the operating costs and multiplying it by a monthly interest rate of 1%.

LABOR

Milking, feeding, bookkeeping & miscellaneous.

Assumed 8.5 hours/day @ $8/hour or 62 hrs/cow/year @ $8 = **$496/cow.**

FIXED COSTS

DEPRECIATION - Buildings & Equipment

- 10 year straight line on equipment.
- 20 year straight line on buildings.

$$\frac{\text{Original Cost - Salvage Value}}{\text{Useful Life}}$$

Buildings: $\frac{\$102,302 - 10,230}{20}$ = $4,604/herd/year or **$92.07/cow/year**

Equipment & Machinery: $\frac{\$71,500 - 7,150}{10}$ = $6,435/herd/year or **$128.70/cow/year**

INVESTMENT

Buildings & Equipment

- The average value of buildings and equipment at a rate of 8% was used.

$$\frac{\text{Original Cost + Salvage Value}}{2} \times 8\%$$

Buildings: $\frac{\$102,302 + 10,230}{2}$ X 0.08 = $4,501/herd/yr. or **$90.02/cow/yr.**

Equipment & Machinery: $\frac{\$71,500 + 7,150}{2}$ X 0.08 = $3,146/herd/yr. or **$62.92/cow/yr.**

LIVESTOCK

- Assumed a purebred herd of 50 cows valued at $1500/cow = $75,000 for the herd.
- The investment on the herd was calculated using 8% interest cost.

$75,000 @ 8% = $6,000 for herd or **$120/cow/year.**

CAPITAL COSTS
(Buildings and Equipment Assumed New)
for a 50 Cow Herd

BUILDINGS

Barn - single storey 40' X 126' @ $12.60/ft^2 . . . . . (includes concrete, materials, air intakes & labor)	$ 63,504
- 50 comfort stalls (i.e. 4' X 5'10" to 6'0") @	
- 2 maternity pens (10' X 12')	7,214
- plumbing (includes 27 water bowls and piping)	
Milkhouse - 18' X 22' @ $31.50/ft^2 . . . . . (includes concrete, materials, septic tank & labor)	12,474
Hay Shed - 36' X 96' (includes concrete, materials & labor) .	15,750
Steel Grain Bin - 11 tonne capacity . . . . . (includes bin, augers, ladder, foundation & labor)	3,360
TOTAL BUILDINGS	**$102,302**

EQUIPMENT & MACHINERY

Equipment:	
Complete Milking System (i.e. 2" pipeline with 4 units) . .	
Bulk Tank and Accessories	
(i.e. 2725 lit. capacity and 3 H.P. condenser)	
Milk House Equipment	
(i.e. stainless steel sink, 40 gallon hot water tank, etc.)	
Pressure System (i.e. 1 1/2 H.P. pump and 100 gallon tank). .	
Gutter Cleaner	60,000
Ventilation and Controls	
(i.e. 1 X one speed 12" fan, 1 X two speed 16" fan and 1 X one speed 18" fan)	
Manure Pump (i.e. 7 1/2 H.P.) and Storage (i.e. pad plus earthern walls)	
Electric Wiring	
4 Milk Meters	
TOTAL EQUIPMENT COST	**$ 60,000**

MACHINERY

Tractor - $32,500 @ 20% (dairy share)	6,500
1/2 Ton Truck - $10,000 @ 50% (dairy share)	5,000
TOTAL MACHINERY	**$ 11,500**

TOTAL BUILDINGS, EQUIPMENT AND MACHINERY. $173,802

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FOR FURTHER INFORMATION SEE YOUR LOCAL MANITOBA AGRICULTURE OFFICE.